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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,174	11/11/2003	Michael Donovan Mitchell	8681RCR2	4650

27752 7590 12/29/2004

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EXAMINER

KIM, YOON YOUNG

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Applicant(s)	Applicant(s)	
	10/705,174	MITCHELL ET AL.	
	Examiner	Art Unit	
	Yoon-Young Kim	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 5-6, and 10 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 8-15, and 22 of U.S. Patent No. 6,827,854 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both disclose filters for removing microorganisms from a fluid which includes a housing having an inlet and an outlet, a filter material disposed within the housing, wherein the filter material is formed at least in part from a plurality of filter particles consisting of activated carbon.

3. Claims 1, 4-10, and 12-13 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-15 of copending Application No. 10/705,572. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both disclose a filter for providing potable water which includes a housing having an inlet and an outlet, a filter material disposed within the

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housing, the filter material formed at least in part from a plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles; at least some of the mesoporous activated carbon filter particles being coated with silver or a silver containing material; and kits comprising filters and information relating to the killing or removal of bacteria, viruses, and microbials.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1, 4-10, and 12-13 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-4, 8-13, 17-21, 23-24, and 28-33 of copending Application No. 10/464,210. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both disclose a filter for providing potable water which includes a housing having an inlet and an outlet, a filter material disposed within the housing, the filter material formed at least in part from a plurality of mesoporous, basic, and reduced-oxygen activated carbon filter particles.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-3, 5, and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Levy, U.S. Patent No. 6,241, 893 B1 in view of Hou et al., U.S. Patent No. 6,565,749 B1.

Regarding Claim 1, Levy discloses a filter for providing potable water, comprising: a housing (Fig. 1, #11) having an inlet (#32) and an outlet (#33); and a filter material disposed within the housing formed at least in part from a plurality of mesoporous activated carbon filter particles (Col. 11, Lines 53-58). Levy does not disclose a cationic polymer. Hou teaches a cationic polymer bonded to the reactive surface of a filter (Col. 32, Lines 29-40). It would have been obvious to one of ordinary skill in the art to modify Levy by adding the cationic polymer of Hou to attract microorganisms in the liquid being filtered (Col. 3, Lines 15-20).

Regarding Claim 2, Hou discloses the cationic polymer is selected from the group consisting of: polyvinylamine, poly(N-methylvinylamine), polyallylamine, polyallyldimethylamine, polydiallylmethylamine, polydiallyldimethylammonium chloride, polyvinylpyridinium chloride, poly(2-vinylpyridine), poly(4-vinylpyridine), polyvinylimidazole, poly(4-aminomethylstyrene), poly(4-aminostyrene), polyvinyl(acrylamide-co-dimethylaminopropylacrylamide), polyvinyl(acrylamide-co-dimethylaminoethylmethacrylate), polyethyleneimine, polylysine, DAB-Am and PAMAM dendrimers, polyaminoamides, polyhexamethylenebiguanide, polydimethylamine-epichlorohydrine, aminopropyltriethoxysilane, N-(2-aminoethyl)-3-aminopropyltrimethoxysilane, N-trimethoxysilylpropyl-N,N,N-trimethylammonium chloride, bis(trimethoxysilylpropyl)amine, chitosan, grafted starch, the product of alkylation of polyethyleneimine by methylchloride, the product of alkylation of polyaminoamides with epichlorohydrine, cationic polyacrylamide with cationic monomers, dimethyl aminoethyl acrylate methyl chloride (AETAC), dimethyl aminoethyl methacrylate methyl chloride (METAC), acrylamidopropyl trimethyl ammonium chloride (APTAC), methacryl amodopropyl trimethyl

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ammonium chloride (MAPTAC), diallyl dimethyl ammonium chloride (DADMAC), ionenes, silanes and mixtures thereof (Col. 7, Line 38 – Col. 8, Line 64).

Regarding Claim 3, Hou discloses the cationic polymer is selected from the group consisting of: polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-[2-(2-ethoxy)-ethoxyethyl-guanidinium] chloride (Col. 7, Line 38 – Col. 8, Line 64).

Regarding Claim 5, Levy discloses the that the sum of the mesopore and the macropore volumes of the plurality of mesoporous activated carbon filter particles is between about 0.2 mL/g and about 2 mL/g (Col. 17, Lines 23-25).

Regarding Claim 8, Levy in view of Hou does not disclose the single-collector efficiency or the filter coefficient. Optimum or workable ranges of result-effective variables would be determined to achieve the desired results in the process. In re Boesch, 205 USPQ 215 (CCPA 1980). The filter characteristics used to calculate the single-collector efficiency or the filter coefficient are result-effective variables, and their optimum ranges would have been determined by routine experimentation in order to achieve the desired results in filtration.

7. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Beauman et al, U.S. Patent No. 4,396,512 in view of Levy.

Regarding Claim 10, Beauman discloses a filter for providing potable water, comprising: a housing having an inlet and an outlet (Col. 15, Lines 5-10); and a filter material disposed within the housing formed at least in part from a plurality of activated carbon filter particles and other materials selected from the group consisting of activated carbon powders, activated carbon granules, activated carbon fibers, zeolites, activated alumina, activated magnesia,

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diatomaceous earth, activated silica, hydrotalcites, glass, polyethylene fibers, polypropylene fibers, ethylene maleic anhydride copolymer fibers, sand, clay and mixtures thereof (Col. 4, Line 67 - Col. 5, Line 2), wherein at least a portion of the other materials are coated with a material selected from the group consisting of silver, a silver containing material, a cationic polymer and mixtures thereof (Col. 14, Lines 10-24). Beauman does not disclose the pore size of the filter. Levy teaches a water filter that is mesoporous (Col. 20, Lines 8-14). It would have been obvious to one of ordinary skill in the art to modify Beauman by adding the pore size of Levy for optimal filter performance (Col. 11, Lines 53-58).

8. Claims 4, 6-7, and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Levy in view of Hou as applied to Claim 1 above, and further in view of Beauman et al, U.S. Patent No. 4,396,512.

Regarding Claim 4, Levy in view of Hou discloses mesoporous activated carbon filter particles but does not disclose silver or silver containing materials. Beauman discloses at least a portion of the activated carbon filter particles coated with silver or a silver containing material (Col. 14, Lines 10-24). It would have been obvious to one of ordinary skill in the art to modify Levy in view of Hou by adding the silver element of Beauman so that bacterial growth in and on the carbon filtration material is inhibited (Col. 5, Lines 31-38).

Regarding Claim 6-7, Levy in view of Hou does not disclose BRI, VRI, F-BLR, and F-VLR values. Beauman discloses that the BRI, VRI, F-BLR, and F-VLR values are as claimed by the invention and in compliance with EPA regulations (Col. 3, Lines 8-14). It would have been obvious to one of ordinary skill in the art to modify Levy in view of Hou by adding the BRI, VRI, F-BLR, and F-VLR values of Beauman in order to comply with EPA regulations.

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Regarding Claim 14, Hou discloses the cationic polymer is selected from the group consisting of: polyaminoamides, polyethyleneimine, polyvinylamine, polydiallyldimethylammonium chloride, polydimethylamine-epichlorohydrin, polyhexamethylenebiguanide, poly-[2-(2-ethoxy)-ethoxyethyl-guanidinium] chloride (Col. 7, Line 38 – Col. 8, Line 64).

9. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Levy in view of Hou as applied to Claim 1 above, and further in view of Denkewicz, Jr. et al., U.S. Patent No. 5,772,896.

Regarding Claim 9, Levy in view of Hou discloses that the plurality of mesoporous activated carbon filter particles are basic (Levy, Col. 35, Lines 11-16) but does not disclose a point zero charge or an ORP. Denkewicz teaches a point zero charge between about 9 and about 12 (Col. 1, Lines 45-51) and an ORP between about 290 mV and about 175 mV (Col. 1, Lines 23-27). Optimum or workable ranges of result-effective variables would be determined to achieve the desired results in the process. In re Boesch, 205 USPQ 215 (CCPA 1980). The point zero charge and ORP are result-effective variables, and their optimum ranges would have been determined by routine experimentation in order to achieve the desired results in filtration.

10. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Levy in view of Hou as applied to Claim 1 above, and further in view of Tremblay.

Regarding Claim 12, Levy in view of Hou does not disclose a package or a method of communicating information. Tremblay teaches a package for containing the filter; and wherein either the package or the filter housing comprises information that the filter or filter material provides reduction of water contaminants (Col. 5, Line 54 – Col. 6, Line 4). It would have been



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obvious to one of ordinary skill in the art to modify Levy in view of Hou by adding the elements of Tremblay in order to convey the important benefits of the filter (Col. 5, Lines 63-67).

11. Claim 11 and 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Beauman in view of Levy as applied to Claim 10 above, and further in view of Tremblay et al., U.S. Patent No. 6,660,166 B2.

Regarding Claim 11, Beauman in view of Levy does not disclose a cationic polymer. Hou teaches a cationic polymer bonded to the reactive surface of a filter (Col. 32, Lines 29-40). It would have been obvious to one of ordinary skill in the art to modify Beauman in view of Levy by adding the cationic polymer of Hou to attract microorganisms in the liquid being filtered (Col. 3, Lines 15-20).

Regarding Claim 13, Beauman in view of Levy does not a package or a method of communicating information. Tremblay teaches a package for containing the filter; and wherein either the package or the filter housing comprises information that the filter or filter material provides reduction of water contaminants (Col. 5, Line 54 – Col. 6, Line 4). It would have been obvious to one of ordinary skill in the art to modify Beauman in view of Levy by adding the elements of Tremblay in order to convey the important benefits of the filter (Col. 5, Lines 63-67).

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yoon-Young Kim whose telephone number is (571) 272-2240. The examiner can normally be reached on 8:30-4:30, Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YK  
12/22/04

  
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